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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,475	10/15/2003	Arie Shahar	P-5647-US1	6694
49443	7590	09/25/2006	EXAMINER	
PEARL COHEN ZEDEK, LLP 1500 BROADWAY 12TH FLOOR NEW YORK, NY 10036			SINGH, DALZID E	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/684,475

Applicant(s)

SHAHAR, ARIE

Examiner

Dalzid Singh

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 6 recites, "produce relative phase shifts that are equal to said relative phase shifts." It is unclear what is meant by the claim.

4. Claim 20 recites the limitation "said the number of time slots" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-4 and 6-20 are rejected under 35 U.S.C. 102(e) as being anticipated by (US Pub. No. 2003/0058504).

Regarding claim 1, Cho et al disclose an optical transmission system comprising:

- a) an input encoding unit having at least one input for receiving a data channel (shown in Fig. 8);
- b) an output decoding unit having at least one output for providing a data channel (shown in Fig. 21);
- c) a radiation guide for carrying encoded optical data signals from said encoding unit to said decoding unit (the radiation guide is the optical fiber connecting the encoder to the decoder), and
- d) said encoded optical data signals are in a form of a train of optical pulses equally separated by a time interval and having relative phase shifts between adjacent pulses (the pulses are in a form of train optical pulses (1831)).

Regarding claim 2, wherein said phase shifts are in the range between 0 and integral number of 2π radians (shown in Fig. 8, the signal is phase shifted by 90 degrees).

Regarding claim 3, wherein said decoding unit includes an array of summing gates having first and second inputs (Fig. 21 shows array of summing gates (546,560); see paragraph 0191).

Regarding claim 4, shown in Fig. 21, wherein said summing gates connected to a dividing device (518, 520).

Regarding claim 6 (as far as understood in view of 112 2nd paragraph), wherein said first and second inputs of said summing gates produce relative phase shifts (the

summing gates generates constructive and destructive output signal which generates relative phase shifts).

Regarding claim 7, as shown in Fig. 21, wherein said one output of said decoding unit produces multiple levels signals.

Regarding claim 8, wherein said one output of said decoding unit produces the highest level of said multiple levels signal when the relative phase shift between the first and the second inputs of a summing gate of said decoding unit is equal to one of said relative phase shifts (the summing gates generates constructive and destructive output signal which generates relative phase shifts).

Regarding claim 9, wherein said time interval is equal to integral number of time slots of said encoded optical data signal (the stream of pulses is separated by channel spacing which is equal to integral number of time slots).

Regarding claim 10, as shown in Fig. 8, wherein said phase shifts selected to produce said multiple levels signal that their amplitudes are equally spaced (the output signal are equally spaced).

Regarding claim 11, wherein said one output of said decoding unit includes threshold mechanism (see Fig. 16a).

Regarding claim 12, wherein said threshold mechanism includes electronic threshold (see Fig. 16a).

Regarding claim 13, wherein said threshold mechanism includes optical threshold (see Fig. 24, local oscillator provides optical threshold for comparison).

Regarding claim 14, wherein said decoding unit is a demultiplexing unit (see Fig. 22).

Regarding claim 15, wherein said encoding unit includes multiple inputs and said decoding units includes multiple outputs (see Figs. 8 and 21).

Regarding claim 16, wherein said encoding unit includes one input and said decoding units includes one output (see Figs. 8 and 21).

Regarding claim 17, wherein said encoding unit receives multiple data channels by multiple said inputs and encodes said data channels into single said encoded optical data signals (see Fig. 8).

Regarding claim 18, wherein said each of said data channels received by one of said multiple inputs emitted by one of said outputs of said decoding unit (see Fig. 21).

Regarding claim 19, wherein said encoding unit receives single data channel by said one inputs and encodes said data channels into single said encoded optical data signals (see Fig. 21).

Regarding claim 20 (as far as understood in view of the 112 2nd paragraph), wherein said the number of time slots reserved for the pulses in said encoded optical data signal is smaller than the number of time slots reserved for said data channel (it is well known that the number of time slots reserved for the pulses in said encoded optical data signal is smaller than the number of time slots reserved for said data channel in order to provide greater transmission capacity).

Allowable Subject Matter

7. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rzeszewski (US Patent No. 4,989,199) is cited to show code and wavelength multiplexing.

Welch et al (US Pub. No. 2005/0276613) is cited to show FEC enhanced system for an optical communication network.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2613

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS

September 15, 2006

David Singh